## AMENDMENTS TO THE CLAIMS

**Listing of Claims:**

Claims 1-20 (cancelled).

Claim 21 (original) A method of modulating, attenuating, or decreasing obesity in an individual comprising the administration of a 1, 25-dihydroxyvitamin D (1,25-$(OH)_2$-D) receptor antagonist.

Claim 22 (**currently amended**) The method of claim 21, wherein said antagonist comprises an antibody that binds to said 1,25-$(OH)_2$-D receptor.

Claim 23 (**currently amended**) The method of claim 21, wherein said antagonist is a chemical compound that binds to said 1,25-$(OH)_2$-D receptor.

Claim 24 (**currently amended**) The method of claim 21, wherein said antagonist is 1-$\beta$, 25, dihydroxyvitamin D.

Claim 25 (original) A method of modulating, attenuating, or decreasing obesity in an individual comprising the administration of a 1, 25-dihydroxyvitamin D (1,25-$(OH)_2$-D) antagonist.

Claim 26 (**currently amended**) The method of claim 25, wherein said 1, 25-dihydroxyvitamin D (1,25-$(OH)_2$-D) antagonist is an antibody that binds to 1,25-$(OH)_2$-D.

Claim 27 (**currently amended**) The method of claim 25, wherein said 1, 25-dihydroxyvitamin D (1,25-$(OH)_2$-D) antagonist is a chemical compound that binds to 1,25-$(OH)_2$-D.

Claim 28 (cancelled).

Claim 29 (original) The method of claim 25, wherein said antagonist comprises one or more soluble 1,25-$(OH)_2$-D receptors.

Claims 30-34 (cancelled).

Claim 35 (**new**) The method of claim 25, wherein the individual has Grade I obesity.

Claim 36 (**new**) The method of claim 25, wherein the individual has Grade II obesity.

Claim 37 (**new**) The method of claim 25, wherein the individual has Grade III obesity.

Claim 38 (**new**) A method of regulating body weight comprising administering to an individual regulating body weight an antagonist of calcitrophic hormone (1,25-$(OH)_2$-D) activity in an amount effective to block calcitrophic hormone (1,25-$(OH)_2$-D) activity in adipocytes of said individual, said antagonist inducing weight loss, preventing weight gain and/or increasing metabolic consumption of adipose tissue.

Claim 39 (**new**) The method of claim 38, wherein the antagonist comprises a 1,25-$(OH)_2$-D receptor antagonist selected from the group consisting of an antibody that binds to said 1,25-$(OH)_2$-D receptor and a chemical compound that binds to said 1,25-$(OH)_2$-D receptor.

Claim 40 (**new**) The method of claim 38, wherein said antagonist is an analog, homolog or isomer of 1,25-$(OH)_2$-D that binds to the 1,25-$(OH)_2$-D receptor and antagonizes the function of the receptor.

Claim 41 (**new**) The method of claim 38, wherein said antagonist is 1-$\beta$, 25, dihydroxyvitamin D.

Claim 42 (**new**) The method of claim 38, wherein the antagonist comprises a 1,25-$(OH)_2$-D antagonist selected from the group consisting of an antibody that binds to said 1,25-$(OH)_2$-D, a chemical compound that binds to said 1,25-$(OH)_2$-D, one or more soluble 1,25-

$(OH)_2$-D receptors, 1,25-$(OH)_2$-D neutralizing antibodies; soluble 1,25-$(OH)_2$-D receptor; fusion proteins comprising the 1,25-$(OH)_2$-D receptor; and compounds comprising calcium.

Claim 43 (**new**) The method of claim 38, wherein the antagonist comprises calcium.

Claim 44 (**new**) The method of claim 38, wherein the antagonist comprises calcium carbonate.

Claim 45 (**new**) The method of claim 38, wherein said antagonist comprises dietary calcium.

Claim 46 (**new**) The method of claim 45, comprising administering over a prolonged period a dietary supplement comprising calcium, a foodstuff supplemented with calcium, or another food high in calcium.

Claim 47 (**new**) The method of claim 46, wherein the prolonged period is at least about one month.

Claim 48 (**new**) The method of claim 47, wherein said dairy product is milk, yogurt, and/or cheese.

Claim 49 (**new**) The method of claim 38, wherein said administration comprises administering a dairy product.

Claim 50 (**new**) The method of claim 38, wherein the antagonist is contained in a liquid.

Claim 51 (**new**) The method of claim 50, wherein the liquid is supplemented with calcium.

Claim 52 (**new**) The method of claim 38, wherein said antagonist is contained in food for a non-human animal.

Claim 53 (**new**) The method of claim 38, wherein the antagonist blocks the action of

1,25-$(OH)_2$-D in adipocytes.

Claim 54 (**new**) The method of claim 38, wherein the administering decreases the levels of calcitrophic hormones in the adipocytes.

Claim 55 (**new**) The method of claim 38, wherein the calcitrophic hormone activity in adipocytes that is blocked is selected from one or more of inhibiting lipolysis, stimulating lipogenesis, increasing adiposity, stimulating triglyceride accumulation, increasing intracellular calcium concentration ($[Ca^{2+}]_i$), inhibiting adipocyte uncoupling protein 2 (UCP2) expression and/or stimulating fatty acid synthase (FAS) activity.

Claim 56 (**new**) The method of claim 38, wherein the antagonist reduces the risk of a health problem selected from the group consisting of coronary artery disease, stroke, diabetes, osteoarthritis, ligament injuries, perineal dermatitis, diabetes mellitus, cardiomyopathy, and urologic syndrome.

Claim 57 (**new**) The method of claim 38, wherein the individual is a human.

Claim 58 (**new**) The method of claim 38, wherein the individual is a non-human animal.

Claim 59 (**new**) The method of claim 38, wherein the antagonist stimulates lipolysis and inhibits lipogenesis.

Claim 60 (**new**) The method of claim 38, wherein the antagonist blocks calcitrophic hormone induced inhibition of lipolysis in adipocytes.

Claim 61 (**new**) The method of claim 38, wherein the antagonist suppresses adiposity, inhibits triglyceride accumulation, reduces intracellular calcium concentration ($[Ca^{2+}]_i$), increases adipocyte uncoupling protein 2 (UCP2) expression, increases core temperature, accelerates weight loss and fat mass reduction in an individual under caloric restriction, and/or prevents

stimulation of fatty acid synthase (FAS) activity.

Claim 62 (**new**) The method of claim 38, wherein the antagonist suppresses adiposity and inhibits triglyceride accumulation by stimulating lipolysis and inhibiting lipogenesis.

Claim 63 (**new**) The method of claim 38, wherein the antagonist suppresses or decreases intracellular calcium concentration ($[Ca^{2+}]_i$).

Claim 64 (**new**) The method of claim 38, wherein the antagonist increases adipocyte uncoupling protein 2 (UCP2) expression.

Claim 65 (**new**) The method of claim 38, wherein the antagonist increases core temperature.

Claim 66 (**new**) The method of claim 38, wherein the antagonist induces a metabolic state in which the energy metabolism is shifted from energy storage to energy expenditure.

Claim 67 (**new**) The method of claim 38, wherein the antagonist accelerates weight loss and/or fat mass reduction in an individual under caloric restriction.

Claim 68 (**new**) The method of claim 38, wherein the antagonist prevents calcitrophic hormone stimulation of fatty acid synthase (FAS) activity.

Claim 69 (**new**) A method of identifying an antagonist of calcitrophic hormone activity, comprising:

(a) treating adipocyte cells with a calcitrophic hormone and measuring a calcitrophic hormone activity,

(b) treating said cells with a potential antagonist and measuring calcitrophic hormone activity, and

(c) determining whether said calcitrophic hormone activity is inhibited by said potential antagonist.

Claim 70 (**new**) The method of claim 69, wherein the inhibited calcitrophic hormone activity is selected from one or more of lipogenesis, adiposity, triglyceride accumulation, elevated intracellular calcium concentration ($[Ca^{2+}]_i$), suppressed adipocyte uncoupling protein 2 (UCP2) expression, and/or stimulation of fatty acid synthase (FAS) activity.

Claim 71 (**new**) The method of claim 69, wherein the potential antagonist is a vitamin D receptor antagonist.

Claim 72 (**new**) The method of claim 69, wherein the potential antagonist is a vitamin D antagonist.

Claim 73 (**new**) The method of claim 69, wherein treating the cells with the calcitrophic hormone increases fatty acid synthase (FAS) activity and said increase is prevented by pretreatment with said potential antagonist.

Claim 74 (**new**) The method of claim 69, wherein treating the cells with the calcitrophic hormone inhibits lipolysis and said inhibition is prevented by pretreatment with said potential antagonist.

Claim 75 (**new**) The method according to claim 69, comprising:

(a) treating human adipocyte cells with 1, 25-dihydroxyvitamin D (1,25-$(OH)_2$-D) and measuring calcitrophic hormone (1,25-$(OH)_2$-D) activity,

(b) pre-treating said cells with a potential antagonist and measuring calcitrophic hormone (1,25-$(OH)_2$-D) activity, and

(c) detecting inhibition of said calcitrophic hormone (1,25-$(OH)_2$-D) activity.

Claim 76 (**new**) The method of claim 69, comprising:

(a) treating human adipocyte cells with 1, 25-dihydroxyvitamin D (1,25-$(OH)_2$-D) and measuring calcitrophic hormone (1,25-$(OH)_2$-D) activity,

(b) treating said cells with 1α,25-dihydroxylumisterol$_3$ (1α,25-(OH)$_2$-lumisterol$_3$) and measuring calcitrophic hormone (1,25-(OH)$_2$-D) activity,

(c) pre-treating said cells with a potential antagonist and measuring calcitrophic hormone (1,25-(OH)$_2$-D) activity, and

(d) detecting inhibition of said calcitrophic hormone (1,25-(OH)$_2$-D) activity by comparing the activity of step (c) with the activity of steps (a) and (b).

Claim 77 (**new**) The method of claim 69, comprising:

(a) treating the cells with isoproterenol and measuring an increase in lipolysis,

(b) treating the cells with 1α,25-(OH)$_2$-D$_3$ or 1α,25-(OH)$_2$-lumisterol$_3$, and measuring inhibition of isoproterenol-stimulated lipolysis,

(c) pre-treating cells with the potential antagonist and measuring lipolysis, and

(d) selecting an antagonist which prevents 1α,25-(OH)$_2$-D$_3$ and 1α,25-(OH)$_2$-lumisterol$_3$ mediated inhibition of isoproterenol-stimulated lipolysis.